Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands	)	WT Docket No. 06-150
	)	
	)	
Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102
	)	
	)	
Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones	)	WT Docket No. 01-309
	)	

REPLY COMMENTS

George Alex
Chief Financial Officer
NextWave Broadband Inc.
75 Holly Hill Road, Suite 200
Greenwich, CT 06830
(203) 742-2532

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Executive Summary

NextWave is encouraged by the Commission's efforts to refresh the record on the Upper and Lower 700 MHz band plans and service rules. NextWave sees the 700 MHz Bands as prime spectrum to provide next-generation mobile and fixed broadband IP-based services – including Internet access, web pages, VoIP, streaming media, and other WiMAX-based applications – via spectrally-efficient, TDD systems. As NextWave expressed in its earlier comments, the current Upper and Lower 700 MHz Band license sizes are not configured to facilitate easy spectrum access, and the lack of unpaired licenses of sufficient spectral capacity render them entirely unsuitable for TDD technologies. To rectify these deficiencies, NextWave proposed band plans for the Upper and Lower 700 MHz Bands emphasizing unpaired licenses of 10 MHz in spectral size, with geographic service areas that are considerably smaller than current configurations. In these reply comments, NextWave makes the following proposals:

- NextWave modifies the band plan proposal submitted in its comments to: (1) make both 12 MHz unpaired blocks in the Lower 700 MHz Band of CMA size, so that they can be acquired in pairs for FDD applications; and (2) create two unpaired 10 MHz licenses of EA size (again suitable for pairing by FDD proponents) in the Upper 700 MHz Band, along with one 2 x 5 MHz paired license of CMA size for FDD applications. NextWave's revised band plan proposal provides for wider channel bandwidths, smaller licensing areas, and flexibility in pairing and unpairing so that these licenses will appeal to a large cross-section of TDD and FDD proponents and uses. NextWave's band plan proposal achieves important policy goals, such as enhancing competition, facilitating rural buildout, optimizing use of the band and promoting spectral efficiencies, and creating a neutral regulatory environment that can support a variety of service offerings to consumers.

- NextWave proposes that the Commission examine the feasibility of permitting unlicensed operations in "unused" 700 MHz spectrum. There exists a real need for access to spectrum below 3 GHz on an unlicensed basis, which requires creative solutions. RF technologies are achieving remarkable levels of sophistication, which suggests that unlicensed devices can be programmed to operate in many environments under a wide variety of conditions. While specifically addressed to operation on vacant TV channels, the Commission's recent conclusion that the TV White Space approach is technically achievable further suggests that consideration of similar approaches for enabling access to unused 700 MHz Band spectrum is warranted.

- NextWave agrees with the majority of commenters and supports application of the current Part 27 substantial service rules to 700 MHz Band licensees. NextWave also supports 15-year license terms. A 15-year term would provide time for incumbent users to be cleared from the band and is consistent with other recent service allocations.

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REPLY COMMENTS

NextWave Broadband Inc. ("NextWave") hereby replies to comments filed in response to the Federal Communications Commission's ("FCC" or "Commission") Notice of Proposed Rulemaking contemplating changes to the Part 27 service rules governing wireless licenses in the 698-746 MHz band (the "Lower 700 MHz Band") and the 746-764 and 776-794 MHz bands (the "Upper 700 MHz Band") (collectively, the "700 MHz Band").[1]

NextWave maintains that the Commission already has allocated an overabundance of spectrum with band plans designed for frequency division duplex ("FDD") use, and there is a dire need for more spectrum compatible with time division duplex ("TDD") use. Consistent with the Commission's spectrum policy goals in this proceeding and others, the Commission's best plan for the 700 MHz Band is to adopt a technology-neutral band plan that unpairs spectrum so that it can be used for wireless services that employ either FDD or TDD technologies.

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[1] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Notice of Proposed Rulemaking, 21 FCC Rcd 9345 (2006) ("*NPRM*").

In recognition of the proposals made by other commenting parties in this proceeding that favor allocation of more spectrum for FDD use, NextWave has modified its original band proposal to create a paired spectrum block in the Upper 700 MHz band, and has harmonized the service areas for the remaining unpaired spectrum blocks in the Upper and Lower 700 MHz Bands to ensure that all 700 MHz channels are equally usable by FDD technologies and TDD technologies. By authorizing unpaired 700 MHz spectrum that can be acquired singly and used for TDD services, or acquired in pairs and used for FDD services, and by authorizing wider channel bandwidths and smaller licensing areas, the Commission will realize a number of important policy goals, including: maximizing the number and type of licensees interested in utilizing 700 MHz spectrum; optimizing use of the band for WiMAX and other next-generation services; allocating more spectrum for TDD uses; creating a neutral regulatory environment that can support a variety of service offerings to the public; and creating opportunities in the 700 MHz Band for "more effective use of this spectrum to foster a variety of services and better meet the needs of today's consumers."[2]

I. MODIFYING THE UPPER AND LOWER 700 MHZ BANDS TO ACCOMMODATE MATCHING BLOCKS OF UNPAIRED SPECTRUM WILL ALLOW DEPLOYMENT OF TDD AND FDD-BASED SERVICES, AND WILL ENCOURAGE USE OF THE 700 MHZ BAND BY A WIDER VARIETY OF PROVIDERS.

By adopting either NextWave's original proposed band plan[3] that calls for allocation of all unpaired spectrum blocks in the 700 MHz Band, or adopting NextWave's alternative plan that creates both paired and unpaired spectrum blocks and harmonizes the service areas for unpaired spectrum blocks in the Upper and Lower 700 MHz Bands so that they can be used by both FDD

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[2] *NPRM*, ¶ 25.

[3] NextWave Comments at 7-8.

and TDD services, the Commission can promote its policy of technological neutrality, and satisfy its statutory duties to encourage "the development and rapid deployment of new technologies, products, and services for the benefit of the public"[4] and to "ensur[e] that new and innovative technologies are readily accessible to the American people."[5] Unlike other plans proposed in this proceeding, both of NextWave's proposed plans: (1) promote the Commission's goal of technological neutrality; (2) provide the greatest opportunity for the widest variety of providers to use 700 MHz spectrum in the public interest; (3) promote spectral efficiency; (4) do not impede or preclude use of the spectrum for FDD applications; and (5) satisfy the Commission's strategic plan and statutory obligations.

A. Adoption Of The NextWave Band Plan For 700 MHz Will Promote The Commission's Goal Of Technological Neutrality.

The Commission's policy goals of flexible spectrum allocations and technological neutrality are germane to this 700 MHz proceeding, and observing these goals has led to wise decision-making in other recent proceedings.[6] In the Broadband Radio Service ("BRS")

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[4] 47 U.S.C. § 309(j)(3)(A).

[5] 47 U.S.C. § 309(j)(3)(B).

[6] *See, e.g., Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, Notice Of Proposed Rulemaking, 15 FCC Rcd 24203, ¶ 93 (2000) ("[The] harmonization [of rules for similar services] provides regulatory neutrality to help establish a level playing field across technologies and thereby foster more effective competition. . . . The Commission has recognized that public interest considerations may favor flexible use, particularly in regard to new spectrum allocations. . . . .As we stated in adopting service rules for the 39 GHz service, 'it is in the public interest to afford [ ] licensees flexibility in the design of their systems to respond readily to consumer demand for their services, thus allowing the marketplace to dictate the best uses for this band.'")(internal citations omitted); *Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands*, Report and Order and Memorandum Opinion and Order, 17 FCC Rcd 368, ¶64 (2002) ("Therefore, in keeping with our policy of providing flexibility where possible and appropriate so that potential licensees can determine and offer the services that are valued most highly, we are adopting our proposal to provide a flexible allocation in this band for fixed and mobile (except aeronautical mobile services)." (creating unpaired use of the 1670-1675 band for services including i-BURST, a technology that combines TDD and smart antennas to deliver high-speed packet data).

proceeding, the Commission's goals included promoting availability of broadband to all Americans and promoting innovation by maximizing flexibility in the service rules.[7] The Commission expressly adopted a band plan that accommodated FDD and TDD service in order to "offer flexibility through technical neutrality."[8] Numerous commenters in that proceeding supported a band plan that accommodates TDD and FDD technologies and provides carriers with technological flexibility to respond to market demands.[9] The Commission agreed, concluding:

> Allowing the band to be technology neutral is consistent with our goal to make the spectrum as flexible as possible as it permits licensees and the marketplace to determine which technologies should be utilized . . ., not restricting the band to a particular technology allows licensees and systems operators to deploy either FDD or TDD technology, and freely switch between the two as the technology develops and the marketplace demands evolve... technologies such as next generation FDD and TDD would not thrive in a regulatory environment that restricts flexibility and mandates one technology over another.[10]

The Commission should take the same approach in the 700 MHz proceeding as it took in the BRS proceeding. The Commission should strive to make the 700 MHz spectrum as flexible and technically neutral as possible in order "to permit licensees and the marketplace to determine which technologies should be utilized."[11] Such a result would be consistent with the Commission's original thinking on the 700 MHz Band. The Commission noted that "regulatory neutrality and operational uniformity across the 700 MHz Band will permit the marketplace to

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[7] *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 14165, ¶ 36 (2005) ("*BRS Report and Order*").

[8] *Id.*

[9] *See, e.g.*, Earthlink Comments, Docket No. 03-66, at 7; Alvarion Reply Comments, Docket No. 03-66, at 3.

[10] *BRS Report and Order*, ¶ 132.

[11] *Id.*

achieve the highest valued end use of the spectrum."[12] The Commission should make its policy goal of regulatory neutrality for the 700 MHz Band a reality and adopt a technologically neutral band plan that accommodates both TDD and FDD. Such a result would be consistent with the Commission's own determination that unpaired spectrum fosters growth in new services.[13]

B. Providing More Spectrum That Is Compatible With TDD Uses Will Serve the Commission's Goals Of Leveling The Playing Field And Providing The Greatest Opportunity For The Widest Variety Of Providers To Use The 700 MHz Spectrum.

One of the Commission's goals in this proceeding was to determine whether changes to the 700 MHz band plan would enhance competition "among a wider variety of providers and applicants."[14] The Commission has licensed a vast amount of paired spectrum for FDD technologies in the PCS, WCS and AWS auction.[15] Although the Commission committed in the AWS proceeding to provide more spectrum for TDD systems, it has not yet done so.[16] Many commenters in this proceeding advocate for band plan changes to facilitate FDD service, but adding to the already vast spectrum allocations for FDD services will not encourage "a wider variety of providers"[17] to acquire and use 700 MHz spectrum. If the Commission truly wishes to enhance competition among a wider variety of providers, then it should grant spectrum that is

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[12] *Id.*

[13] *See BRS Report and Order*, ¶43 "(After adopting an unpaired band plan for BRS and EBS, the FCC concluded [i]ncumbents will enjoy the benefit of spectrum with increased flexibility and utility while the public benefits from the likely innovation and cost savings that will result from increased competition.").

[14] *NPRM*, ¶ 54.

[15] NextWave Broadband, Inc. Comments to NPRM filed September 29, 2006 ("NextWave Comments") at 6.

[16] "[W]e will make every effort to provide spectrum opportunities for TDD systems in future allocation and spectrum proceedings." *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, Report and Order, 18 FCC Rcd 25162, 25179 (2003).

[17] *NPRM*, ¶ 54.

compatible with TDD and FDD applications. It is absolutely critical to the development of TDD, IP-based applications and services that unpaired spectrum is made available.[18] Failure to provide unpaired spectrum for TDD service in this proceeding would grant FDD service an unfair regulatory advantage simply because it can be readily deployed on paired spectrum and there are, already, numerous FDD spectrum options.

The Commission must take notice, as it considers the value of authorizing more unpaired spectrum, that one of the only success stories in the 700 MHz Band, to date, is Qualcomm, and it is using unpaired 700 MHz spectrum. More unpaired spectrum is needed if the Commission wishes to encourage Qualcomm-type innovation in the band. Large blocks of unpaired spectrum can be used for multicast services, such as Qualcomm's MediaFLO service, that do not require a return path to a base station. Qualcomm also is in the process of launching a nationwide network using unpaired 700 MHz spectrum that will deliver video, audio and data content to third generation mobile phones.[19] Other 700 MHz licensees support Qualcomm's efforts and are anxious for the Commission to clear the 700 MHz Band so that additional services can be launched.[20] This clear example of the value of unpaired spectrum in the 700 MHz Band cannot be overlooked and the Commission should seek to replicate this result by making more unpaired spectrum available.

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[18] The Broadband Task Force recommended that the Commission "assign spectrum that would allow potential licensees to acquire . . . unpaired spectrum for the deployment of technologies such as time division duplex (TDD), which do not require paired bands." *Connected & On the Go Broadband Goes Wireless Report by the Wireless Broadband Access Task Force*, Report, GN Dkt. No. 04-163, 2005 FCC LEXIS 1488 at 63 (*"Broadband Access Task Force Report"*).

[19] *Qualcomm Inc. Petition for Declaratory Ruling*, Order, WT Docket No. 05-7, FCC 06-155 (rel. Oct. 13, 2006).

[20] Comments of Harbor Wireless, L.L.C., Dkt. No. 05-7, filed on Mar. 10, 2005 at .2; Comments of Corr Wireless Communications LLC, Dkt. No. 05-7, filed on Mar. 8, 2005 at 1; Comments of Access Spectrum, LLC, Dkt. No. 05-07, filed on Mar. 10, 2005 at 1; Comments of the 700 MHz Advancement Coalition, Dkt. No. 05-7, filed on Mar. 8, 2005 at 3-5.

C. Authorizing More Spectrum for TDD Use Will Result In More Efficient Use Of Scarce Spectrum Resources.

The Commission is obligated to promote the "efficient and intensive use of the electromagnetic spectrum."[21] TDD technology is a more efficient method for providing advanced broadband IP-based services than FDD technology. Broadband services typically require more spectrum for downstream transmissions than upstream transmissions, and are thus better suited to using larger unpaired spectrum blocks than symmetrically-paired spectrum blocks.[22] FDD systems use symmetrically-paired channels for upstream and downstream communications, even though the upstream requirements can potentially be met using a fraction of the bandwidth allotted. As a consequence, use of FDD technology for wireless broadband applications can result in wasted and unused spectrum. In contrast, IP-based TDD systems dynamically allocate upstream and downstream spectrum usage within a single contiguous band, resulting in high spectral efficiency when carrying IP-based traffic such as web pages, VoIP and streaming media.[23] Adopting a band plan that accommodates both TDD and FDD service would ensure the Commission meets its statutory goals and its policies on technical neutrality to encourage broadband deployment.[24]

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[21] 47 U.S.C. § 309(j)(3)(D).

[22] As the Wireless Broadband Access Task Force noted, "[b]roadband services differ from traditional mobile telephony services in that they often involve a high volume of downstream traffic – the result of consumers/users downloading large music and video files, as well as graphics-rich content – and a lower volume of upstream traffic." *Broadband Access Task Force Report* at 63.

[23] As noted in NextWave's initial comments, advancements in TDD technology have made TDD systems even more efficient through the use of adaptive modulation, adaptive antenna systems and multiple-input, multiple-output ("MIMO") enhancements, while also fully supporting high-speed mobility. NextWave Comments at 9.

[24] *See, FCC Strategic Plan*, 2005 FCC LEXIS 5325, 5326 ("Regulatory policies must promote technological neutrality, competition, investment, and innovation to ensure that broadband service providers have sufficient incentive to develop and offer such products and services.")

Configuring the Upper and Lower 700 MHz Bands solely as paired spectrum channels to accommodate FDD technologies would place TDD proponents at a great disadvantage and would promote spectrum inefficiencies. Specifically, TDD service providers seeking entry into the 700 MHz Bands would be forced to acquire paired channels when they only require one channel of sufficient spectral size, leaving one half of the pair orphaned and unused. Moreover, because TDD proponents will have to compete at auction for paired spectrum with FDD proponents, who can economically value and thus justify paying higher prices for paired licenses, TDD proponents will pay artificially higher prices to obtain the single channel of spectrum they are targeting. In contrast, licensing on an unpaired channel basis allows both TDD and FDD proponents to target the specific channels they require. No parties would be left with extra spectrum that they may not require or may not be able to utilize.[25]

D. Additional TDD Designations Will Not Impair Or Impede FDD Use of the 700 MHz Band.

The Commission's adoption of a technology-neutral band plan that accommodates both TDD and FDD service will not impair the implementation of FDD service. Carriers that seek paired spectrum to deploy FDD systems can bid on multiple blocks in the Upper and/or Lower 700 MHz Bands to create an FDD channel pairing if an FDD configuration is desired. NextWave has modified its original market boundary recommendations to facilitate this option

[25] While many current TDD systems are capable of operating within multiple, non-contiguous bandwidths under software control, a system that can focus on one wide band is less costly to implement and involves significant operational efficiencies. In addition, if the TDD system is operating on paired channels, then one likely will be adjacent to downstream FDD operations while the other likely will be adjacent to upstream FDD operations, which implicates entirely different interference protection and coordination considerations. This requires considerably more effort on the TDD operator's part and may not be achievable in all instances. TDD service providers would ultimately spend much more on infrastructure to deploy over paired spectrum than if the same amount of unpaired spectrum were utilized, thus decreasing the desirability of using paired spectrum for TDD service. Alternatively, with an identical amount of unpaired spectrum, a single radio utilizing a 10 MHz bandwidth can provide service with less infrastructure and less overhead inefficiency on the radio channel.

by using the same service areas for each of the unpaired allocations in the Upper and Lower 700 MHz Bands to ensure that all 700 MHz channels are equally usable by FDD technologies and TDD technologies. (See Attachment I).

E. Failure To Adhere to The Established Policy Of Technical Neutrality Is Inconsistent with The Commission's Strategic Plan and Statutory Obligations.

If the Commission does not adopt a TDD-compatible plan, the resulting regulatory structure will be inconsistent with the goals of the Commission's strategic plan and the Commission's statutory duties. The lack of a TDD-compatible band plan will deprive carriers of the necessary flexibility to rapidly transition from FDD to TDD technology as technological advances are made and market demands change.[26] That, in turn, will deprive the market of competition in technology and services, in contravention of the Commission's duty to promote competition[27] and its duty to encourage new services.[28]

II. THE COMMISSION SHOULD EXAMINE THE FEASIBILITY OF ALLOWING SECONDARY, UNLICENSED USE OF 700 MHZ SPECTRUM THAT IS UNUSED BY THE LICENSEE.

In the *NPRM*, the Commission sought comment on various mechanisms to facilitate use of 700 MHz spectrum in instances where the spectrum is licensed, but "unused."[29] NextWave

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[26] In the Commission's EBS/BRS proceeding, a number of parties supported a band plan that accommodated TDD and FDD technology because it gave carriers technological flexibility to respond to market demands. *See, e.g.*, Earthlink Comments, Docket No. 03-66 at 7; Alvarion Reply Comments, Docket No. 03-66 at 3.

[27] Preamble, Telecommunications Act of 1996, P.L. 104-104, 100 Stat. 56 (1996) (enacting 1996 Act "to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.").

[28] 47 U.S.C. § 309(j)(3)(A).

[29] In particular, the NPRM sought comment on employing measures directed at reclaiming unused spectrum after some pre-defined amount of time, and mandating "good faith" secondary market negotiating efforts. *NPRM*, ¶¶ 67-72.

believes that the Commission should permit unlicensed operations in "unused" 700 MHz spectrum in order to maximize the public benefits from fallow spectrum.

As the Commission has acknowledged, there is a need for access to spectrum below 3 GHz on an unlicensed basis.[30] The Commission must be creative in finding ways to meet that demand. As the Spectrum Policy Task Force pointed out four years ago, "most prime spectrum has already been assigned to one or more parties, and it is becoming increasingly difficult to find spectrum that can be made available either for new services or to expand existing ones."[31] To remedy this problem, the Task Force recommended that the Commission consider alternative methods for creating additional spectrum access for unlicensed devices, such as "[o]pportunistic or dynamic use of existing bands – through either cognitive radio techniques to find "white space" in existing bands or use protocols to get out of the way of primary users."[32]

NextWave believes a similar approach may be technically feasible with respect to "unused" 700 MHz Band spectrum. The ever-increasing sophistication of RF technologies – from sophisticated software-defined and cognitive radios to contention-base technology now under development by the Institute of Electrical and Electronics Engineers ("IEEE") for the 802.16 (and 802.11) standard for device operations in the 3.6 MHz band (as well as the 802.22 standard for operations in TV white space) – suggest that it is prudent for the Commission to examine methods for putting unused spectrum to use in the public interest subject, of course, to

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[30] *Unlicensed Operations in the TV Broadcast Bands, Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, First Report and Order and Further Notice of Proposed Rulemaking, ET Docket No. 04-186, FCC 06-156 ¶1 (rel. Oct. 18, 2006) ("TV White Space Order").

[31] *Spectrum Policy Task Force*, Report to the Commission, ET Docket No. 02-135 (November 2002) ("*SPTF Report*") at 14.

[32] *SPTF Report* at 63.

the primary rights of licensees. Any unlicensed devices operating in unused spectrum would be required to cease operation when licensed use commences.

The Commission's current proceeding on unlicensed use of so-called "TV White Space" is a prime example of how to creatively tap into unused spectrum resources.[33] Under that approach, unlicensed devices employing cognitive (or "smart") radio technologies will be permitted to operate in vacant TV spectrum once satisfactory technical rules have been established. The impetus for that proceeding was the "significant growth of and consumer demand for unlicensed wireless broadband applications and services" and the corresponding need to "provide additional spectrum for the operation of unlicensed devices that support such applications and services."[34] As the Commission observed in adopting such an approach, "[b]ecause of the favorable propagation characteristics of the TV spectrum, these new devices could provide more effective service at greater ranges than unlicensed devices that operate at higher frequency bands."[35] These same considerations apply with respect to unused 700 MHz spectrum, which was formerly TV spectrum and offers identical propagation characteristics. Allowing use of licensed but unused 700 MHz spectrum could help to alleviate unlicensed spectrum shortages and could hasten the delivery of innovative wireless services to the public.

Although the technical challenges related to facilitating unlicensed use of spectrum between fixed, one-way TV transmit sites, having known signal contours, may be less challenging than facilitating such use in the 700 MHz Bands, the fundamental tasks seem quite similar: preventing unlicensed operations within a radius of base stations, sufficient to ensure

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[33] *See, TV White Space Order,* ¶ 13-22.

[34] *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Notice of Proposed Rulemaking, 19 FCC Rcd 10018, ¶ 7 (2004).

[35] *TV White Space Order*, ¶ 13.

that the only signals resolvable by subscriber receivers would be base station transmissions (and vise versa). Perhaps the biggest technical challenge is to ensure that unlicensed devices are continuously updated with current base station location coordinates. These technical challenges are not insignificant, but they are not insurmountable. Since the TV White Space approach to unlicensed use is achievable, and in view of the need to develop additional spectrum access opportunities for unlicensed use, the Commission should examine the feasibility of applying such approach in the 700 MHz Band.

III. MOST PARTIES AGREE THAT AN INCREASE IN THE NUMBER OF SMALLER MARKET LICENSES WOULD PROMOTE THE COMMISSION'S POLICY GOALS.

The Commission requested comment in this proceeding on whether smaller service areas would enhance access to spectrum in rural areas. NextWave agrees with the majority of parties filing comments[36] that smaller geographic service area licenses will promote distribution of

[36] Access Spectrum, et al. at 23-24 ("If additional CMA-sized licenses are desired, they should be located in the Lower 700 MHz band, in spectrum near or adjacent to the existing Lower 700 MHz C Block."); Aloha Partners Comments at 3-6 ("Providing CMA licenses of at least 12 MHz bandwidth is the single most important change that the Commission should make prior to the 2008 auction."); Blooston Rural Carriers Comments at 2-4 ("The Blooston Rural Carriers strongly support the creation of at least one, and preferably two, additional CMA-sized spectrum blocks. The use of CMA-sized licenses has proven to be one of the most effective ways to ensure rural telephone company participation in spectrum auctions."); C&W Enterprises Comments at 2-3 ("The Commission Should Auction the "C Block" Licenses in the Upper 700 MHz in CMA-sized Licenses."); Consumer Federation of America, et al. Comments at 4-5 ("[A]doption of a band plan with relatively small license areas and spectrum blocks is a necessary first step" to reduce the cost of broadband service and to bring broadband service to unserved or underserved areas.); Corr Wireless Communications Comments at 2-4 ("The present A, B and E blocks in the lower band should then be made available on a CMA basis as the C block was originally auctioned."); CTIA Comments at 5-6 ("CTIA believes that a mix of different sized geographic area licenses serves the Commission's goals of balancing efficiency with the dissemination of licenses among a variety of applicants."); Dobson Communications Comments at 4-5 ("Dobson submits that the Commission should create two CMA blocks, one comprised of 20 MHz and the other comprised of 10 MHz, so as to provide meaningful opportunities for smaller carriers, including new entrants."); Doug Howard and Farooq Javed Comments at 9 ("[W]e believe that smaller-area licenses, by allowing greater participation and more granular, competitive business plans, result in a more efficient allocation of spectrum."); Frontier Communications Comments at 2-7 ("Frontier urges the Commission to make licenses available in service areas no larger than RSAs/MSAs used in the AWS auction."); Leap Wireless International Comments at 5 ("Leap believes that balance among bidders at auction will be best served by licensing these blocks uniformly on an Economic Area ("EA") basis."); Metro PCS Communications Comments at 11-12

licenses to a wide variety of applicants, speed service deployment to rural areas, and foster diverse types of service to the public. Specifically, NextWave urges the Commission to configure this spectrum using Cellular Market Area ("CMA") and Economic Area ("EA") licenses.[37] Offering 734 CMA licenses and 176 EA licenses will create the greatest opportunity and flexibility for new entrants and niche providers to acquire spectrum and provide next-generation IP-based services to both urban and rural areas, and will enhance broadband competition. Consequently, adoption of smaller geographic licenses will promote the Commission's statutory and broadband policy objectives.[38]

("supporting the inclusion of smaller service areas and, in most instances, the critical need for smaller (i.e., 10 MHz to 12 MHz) spectrum blocks."); MilkyWay Broadband Comments at 2-6 ("Providing CMA licenses of at least 12 MHz bandwidth is the single most important change that the Commission should make prior to the 2008 auction."); Navajo Nation Telecommunications Comments at 1 ("The situation of issuing licenses in the Economic areas is ideal for the Navajo Nation's services areas for the 700 MHz band licensing plan."); NTCA Comments at 5-6 ("NTCA supports licensing significant portions of the available spectrum according to the small geographic territories, providing opportunity for small carrier to obtain the spectrum."); OPASTCO Comments at 2-3 ("[A]uctioning the 700 MHz Band over smaller geographic license areas such as Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs)3 would offer small, rural wireless carriers with a meaningful opportunity to acquire the spectrum they seek to serve rural consumers."); Paul Milgrom and Karen Wrege Comments at 2-4 ("If the Commission decides that it is in the public interest to offer CMA license areas in the 700 MHz bands, we recommend that the boundaries of CMAs be adjusted so that each CMA is contained entirely within a single EA (or that the EAs be adjusted so that each EA comprises a set of CMAs)."); Rural Telecommunications Group Comments at 2-8 ("RTG strongly supports auctioning additional 700 MHz spectrum on the basis of CMAs."); Rural Cellular Ass'n Comments at 6-7 ("By reassigning the Block B spectrum to the CMAs, the Commission will encourage small and rural carrier participation in spectrum auctions, facilitate deployment of wireless services in rural areas, and avoid excessive concentration of licenses."); and Tropos Networks Comments at 10 ("By combining smaller service areas with a bidding credit tied to promoting immediate investment in advanced services, rural cellular and telephone companies, municipalities, community owned utilities and the private interests that have invested in these entities, will have an ability and incentive to participate in the auction.").

[37] NextWave has also modified its proposed plan to have the Lower 700 MHz band unpaired blocks auctioned on a CMA basis, whereas the upper 700 MHz band proposal is proposed to be auctioned on an EA basis. Such service areas would facilitate pairing for FDD purposes.

[38] Those objectives include encouraging the provision of new technologies and services to the public, and dissemination of licenses to a wide variety of applications. 47 U.S.C. § 309(j).

NextWave understands that there may be agreement among a number of wireless carriers that favor smaller licensed areas with paired spectrum. While NextWave agrees that smaller license areas help foster a variety of policy goals, smaller license areas alone will not remedy the lack of spectrum compatible for TDD systems. Therefore, NextWave proposes that the smaller licensed areas be coupled with unpaired spectrum blocks. NextWave's band plan proposal is attached hereto. (See Attachment I). The plan includes modifications to service area boundaries to facilitate pairing of unpaired licenses in the upper and lower band for FDD use. NextWave's plan also proposes a mix of CMA and EA market boundaries to accommodate a variety of bidders' needs.

IV. THE EXISTING PART 27 SUBSTANTIAL SERVICE REQUIREMENT IS THE MOST EFFECTIVE WAY TO PROMOTE THE COMMISSION'S GOAL FOR ROBUST USE OF THE SPECTRUM.

NextWave agrees with the majority of commenters that support maintaining the Commission's current Part 27 substantial service rules.[39] The existing substantial service rules permit licensees to construct and deploy services in response to consumer demand and market conditions.[40]

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[39] *See* Aloha Partners Comments at 9-10; Blooston Rural Carriers Comments at 6-7; CTIA Comments at 7-8; Dobson Communications Comments at 5-6; Leap Wireless International at 9-10; MetroPCS Communications Comments at 15-16; MilkyWay Broadband Comments at 7-8.

[40] *See* CTIA Comments at 7-8 (changes to "substantial service would "compel[s] licensees to engage in premature, uneconomic and unsustainable deployment"); Leap Wireless Comments (supports a "market oriented approach" to spectrum deployment); Metro PCS Communications Comments (allow carriers to "build facilities based upon market needs and their own business plans").

V. A FIFTEEN YEAR LICENSE TERM WILL PROMOTE INVESTMENT IN 700 MHz SPECTRUM.

NextWave believes that 700 MHz license terms should begin upon completion of the auction and appropriate licensing procedures, but, as the Commission has done in the past, NextWave urges the Commission to grant 15 year licenses in order to allow time for incumbent users to be cleared from the band. Until the DTV transition is complete, it is not reasonable to expect parties to be able to make meaningful progress on construction and deployment of 700 MHz services.

NextWave, along with seven other commenters,[41] supports a fifteen year license term for 700 MHz providers. The Commission was previously constrained to granting CMRS licensees ten year license terms.[42] However, the Commission adopted a fifteen year license term for AWS in order to encourage development and deployment and to attract investors.[43] The Commission also extended some earth station and non-Broadcast Satellite Service ("BSS") licenses from ten

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[41] *See, e.g.*, Cingular Wireless Comments at 13 ("Consistent with the treatment of similar services, 700 MHz licenses should be awarded for 15 year terms."); AT&T Comments at 15 ("To provide additional certainty in order to stimulate investment and the development of new services using this spectrum, the Commission should license 700 MHz spectrum based on 15-year initial license terms similar to those adopted for AWS licenses."); C&W Enterprises Comments at 4-5 (15 year license term provides sufficient time to construct and recoup license purchase and construction costs); Frontier Communications Comments at 8-10 (Previously auctioned and new 700 MHz licenses should have a 15 year license term which will allow licensees sufficient time to construct and recoup costs.); Aloha Partners Comments at 10-11 (all 700 MHz licenses should have a term of 15 years regardless if the license is new or existing); CTIA Comments at 20 (15 year license term will provide investors assurances enough time is available to recoup development costs and provide consistency with AWS license term); and Navajo Nation Telecommunications Regulatory Comments at 3 (15 year term necessary to give licensee adequate time to meet the substantial service build-out requirements).

[42] 47 U.S.C. § 307 (1995).

[43] *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, Report and Order*, 18 FCC Rcd 25162, ¶ 70 (2003) ("[G]iven the relocation and band clearance issues associated with these bands, it makes sense to adjust our usual ten-year license term. The circumstances surrounding the future development and deployment of services in these bands warrant an initial license term longer than 10 years in order to encourage the investment necessary to develop these bands.") (internal footnotes omitted).

years to fifteen years for administrative convenience and to align the license term with the useful life of satellites.[44] Similarly, since many proposed users of 700 MHz spectrum are also new licensees of AWS spectrum, and AWS licensees have been granted 15 year license terms, the Commission should align license terms for 700 MHz licensees and AWS licensees.

VI. CONCLUSION

The 700 MHz Band represents one of the last opportunities to obtain optimal spectrum to provide next-generation mobile broadband services. By adopting either NextWave's original proposed band plan[45] that calls for allocation of all unpaired spectrum blocks in the 700 MHz Band, or adopting NextWave's alternative plan that provides for both paired and unpaired spectrum blocks in the 700 MHz Band and harmonizes the service areas for unpaired blocks in the Upper and Lower 700 MHz Bands to ensure compatibility for both FDD and TDD users, the Commission can promote its policy of technological neutrality, and satisfy its statutory duties to encourage "the development and rapid deployment of new technologies, products, and services for the benefit of the public"[46] and to "ensur[e] that new and innovative technologies are readily accessible to the American people."[47] Unlike other plans proposed in this proceeding, both of NextWave's proposed plans: (1) promote the Commission's goal of technological neutrality; (2) provide the greatest opportunity for the widest variety of providers to use the 700 MHz spectrum

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[44] *Amendment of the Commission's Space Station Licensing Rules and Policies; 2000 Biennial Regulatory Review--Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, Notice of Proposed Rulemaking and First Report and Order, 17 FCC Rcd 3847, ¶¶ 139-143 (2002)("[E]xtending the earth station license term will reduce the administrative burdens on earth station operators, without affecting our ability to protect licensees from harmful interference. Accordingly, we extend the earth station license term to 15 years.")

[45] NextWave Comments at 7-8.

[46] 47 U.S.C. § 309(j)(3)(A).

[47] 47 U.S.C. § 309(j)(3)(B).

to provide next generation services to the public; (3) promote spectral efficiency; (4) do not impede or preclude use of the spectrum for FDD applications; and (5) satisfy the Commission's strategic plan and statutory obligations.

Respectfully submitted,

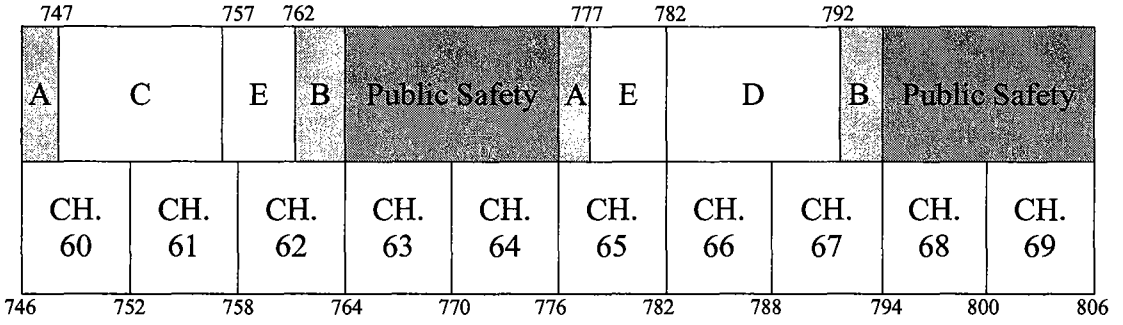
/s/George Alex
George Alex
Chief Financial Officer
NextWave Broadband Inc.
75 Holly Hill Road, Suite 200
Greenwich, CT 06830
(203) 742-2532

October 20, 2006

ATTACHMENT I

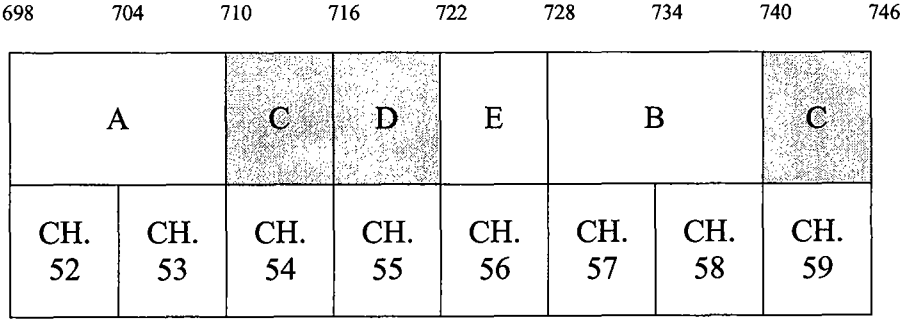
NextWave's Proposed 700 MHz Band Plans

Upper 700 MHz Band



Block	Frequencies	Bandwidth	Pairing	Area Type	Licenses
C	747-757	10 MHz	unpaired	EA	176
D	782-792	10 MHz	unpaired	EA	176
E	757-762, 777-782	10 MHz	2 x 5 MHz	CMA	734

Lower 700 MHz Band



Block	Frequencies	Bandwidth	Pairing	Area Type	Licenses
A	698-710	12 MHz	unpaired	CMA	734
B	728-740	12 MHz	unpaired	CMA	734
E	722-728	6 MHz	unpaired	EA	176

CERTIFICATE OF SERVICE

I, Carly T. Didden, certify on this 20th day of October, 2006, a copy of the foregoing REPLY COMMENTS has been served by U.S. Postal Service First Class Mail, postage pre-paid, to the following:

James J.R. Talbot
Gary L. Phillips
Paul K. Mancini
AT&T Inc.
1120 20th Street, NW
Washington, DC 20036

J.R. Carbonell
Carol L. Tacker
Suite 1700
5565 Glenridge Connector
Atlanta, GA 30342

David Jatlow
West Tower
11760 US Highway 1
North Palm Beach, FL 33408

Robert S. Foosaner
Lawrence R. Krevor
Trey Hanbury
Sprint Nextel Corporation
2001 Edmund Halley Drive
Reston, VA 20191

Steve B. Sharkey
Robert D. Kubik, Ph.D.
Suite 400
1350 I Street, NW
Washington, DC 20005

Steve C. Hillard
George T. Laub
Jonathan B. Glass
Council Tree Communications, Inc.
Suite 205
2919 17th Avenue
Longmont, CO 80503

Michael F. Altschul
Christopher Guttman-McCabe
Paul W. Garnett
Brian M. Josef
Suite 600
1400 16th Street, NW
Washington, DC 20036

Mark Cooper
Consumer Federation of America
Suite 310
1424 16th Street, NW
Washington, DC 20036

Ben Scott
Free Press
Suite 875
501 Third Street, NW
Washington, DC 20001

Gene Kimmelman
Consumers Union
Suite 500
1101 17th Street, NW
Washington, DC 20036

Thomas Gutierrez
Luckas, Nace
Suite 1500
1650 Tysons Blvd.
McLean, VA 22102
Council to Aloha Partners, LP

Thomas Gutierrez
Lukas, Nace
Suite 1500
1650 Tysons Blvd.
McLean, VA 22102
Counsel to Milkyway Broadband LLC

Russell D. Lukas
David L. Nace
Lukas, Nace
Suite 1500
1650 Tysons Blvd.
McLean, VA 22102

Ronald L. Ripley
Dobson Communications Corp.
14201 Wireless Way
Oklahoma City, OK 73134

John T. Scott III
Charla M. Rath
Donald C. Brittingham
Verizon Wireless
Suite 400 West
1300 I Street, NW
Washington, DC 20005

Bert Williams
Tropos Networks
555 Del Rey Avenue
Sunnyvale, CA 94585

John E. Logan
10th Floor
1050 Connecticut Avenue, NW
Washington, DC 20036

Michael I. Gottdenker
Andrew J. Rein
Access Spectrum, LLC
2 Bethesda Metro Center
Bethesda, MD 20814

Ruth Milkman
Kenneth Boley
Gunnar Halley
Lawler, Metzger
Suite 802
2001 K Street, NW
Washington, DC 20006

Donald Doering
Columbia Capital III, LLC
Suite 300
201 North Union Street
Alexandria, VA 22314

Marshall W. Pagon
Cheryl Crate
Pegasus Communications Corp.
Suite 200
225 City Avenue
Bala Cynwyd, PA 19004

Kathleen Wallman
Wallman Consulting, LLC
9332 Ramey Lane
Great Falls, VA 22066

Dr. Rajendra Singh
Telecom Ventures LLC
Suite 360
201 N. Union Street
Alexandria, VA 22314

Carl W. Northrop
Paul, Hastings, Janofsky & Walker
875 15th Street, NW
Washington, DC 20005

Mark A. Stachiw
MetroPCS Communications Inc.
Suite 800
8144 Walnut Hill Lane
Dallas, TX 75231

Doug Howard
39340 Crooked Bridge Road
Leesburg, VA 20175

Farooq Javed
8961 NW 8th Street
Pembroke Pines, FL 33024

Robert J. Irving, Jr.
Leap Wireless International
10307 Pacific Center Court
San Diego, CA 92121

Dean R. Brenner
Qualcomm Inc.
2001 Pennsylvania Avenue, NW
Washington, DC 20006

Veronica M. Ahern
Nixon Peabody LLP
401 9th Street, NW
Washington, DC 20004

Shirley S. Fujimoto
Kevin M. Cookler
McDermott Will & Emery
600 13th Street, NW
Washington, DC 20005

James R. Jenkins
United States Cellular Corp.
8410 Bryn Mawr
Chicago, IL 60631

George Y. Wheeler
Peter M. Connolly
Holland & Knight
Suite 100
2099 Pennsylvania Avenue, NW
Washington, DC 20006

Christopher Campbell
Vermont Department of Public Service
112 State Street
Montpelier, VT 05620

John Bentley, Esq.
Vermont Public Service Board
112 State Street
Montpelier, VT 05620

Thomas Murray
Vermont Agency of Administration
Department of Information and Innovation
133 State Street
Montpelier, VT 06533

Shana Knutson
Nebraska Public Service Commission
300 The Atrium Building
1200 N Street
Lincoln, NE 68505

Richard B. Thompson
Maine Office of Information Technology
26 Edison Drive
145 State House Station
Augusta, ME 04333

Tony Clark
Susan E. Wefald
Kevin Cramer
North Dakota Public Service Comm.
600 E. Boulevard, Dept. 408
Bismarck, ND 58505

Daniel B. Breton
ConnectME Authority
1 State House Station
Augusta, ME 04333

Daniel Mitchell
Jill Canfield
10th Floor
4121 Wilson Blvd.
Arlington, VA 22203

John W. Jones Jr.
C&W Enterprises Inc.
317 North Farr
San Angelo, TX 76903

Kenneth F. Mason
Frontier Communications
180 South Clinton Avenue
Rochester, NY 14546

Kevin Saville
Frontier Communications
2378 Wilshire Blvd.
Mound, MN 55364

Caressa D. Bennet
Gregory W. Whiteaker
Bennet & Bennett PLLC
Seventh Floor
10 G Street, NE
Washington, DC 20002

Linda Kinney
Lori Kalani
EchoStar Satellite LLC
Suite 302
1233 20th Street, NW
Washington, DC 20036

Susan Eid
Stacy R. Fuller
DirecTV
Suite 728
444 North Capitol Street, NW
Washington, DC 20001

John A. Prendergast
Blooston, Mordkofsky, Dickens
Suite 300
2120 L Street, NW
Washington, DC 20037

Suart Polikoff
Stephen Pastorkovich
Brian Ford
Suite 700
21 Dupont Circle, NW
Washington, DC 20036

Donald J. Evans
Fletcher, Heald & Hildreth
11th Floor
1300 North 17th Street
Arlington, VA 22209

James R. Hobson
Miller & Van Eaton
Suite 1000
1155 Connecticut Avenue, NW
Washington, DC 20036

Peter Tannenwald
Irwin, Campbell & Tannenwald
Suite 200
1730 Rhode Island Avenue, NW
Washington, DC 20036

Steve L. Grey
Navajo Nation Telecommunications
Regulatory Commission
PO Box 9000
Window Rock, AZ 86515

Paul Milgrom
Karen Wrege
PO Box 275
Kensington, MD 20895

/s/ Carly T. Didden
Carly T. Didden